

## § 54.10-25

(2) Nonferrous plate less than one-half inch thick.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9977, June 17, 1970; CGD 72-206R, 38 FR 17226, June 29, 1973; CGD 77-147, 47 FR 21810, May 20, 1982; USCG-2003-16630, 73 FR 65170, Oct. 31, 2008]

### § 54.10-25 Manufacturers' data report forms (modifies UG-120).

(a) The Manufacturers' data report form, as provided by the Coast Guard, shall be completed in duplicate and certified by the manufacturer for each pressure vessel required to be shop inspected under these regulations. The original of this form shall be delivered to the Coast Guard inspector.

(b) Data forms for those parts of a pressure vessel requiring inspection, which are furnished by other than the shop of the manufacturer responsible for the completed unit, shall be executed in triplicate by the manufacturer of the parts. The original and one copy shall be delivered to the Coast Guard inspector who shall forward one copy of the report to the Officer in Charge, Marine Inspection, having cognizance over the final assembly. These partial data reports, together with the final inspection and tests, shall be the final Coast Guard inspector's authority to apply the Coast Guard symbol and number. A final data report shall be executed by the manufacturer or assembler who completes the final assembly and tests.

(c) If a pressure vessel is required to be inspected in accordance with § 54.10-3(c), the manufacturer's data reports required by UG-120 must be made available to the Coast Guard inspector for review prior to inspection of the pressure vessel.

(Approved by the Office of Management and Budget under control number 2130-0181)

[CGFR 69-127, 35 FR 9977, June 17, 1970 as amended by CGD 77-147, 47 FR 21810, May 20, 1982]

## Subpart 54.15—Pressure-Relief Devices

### § 54.15-1 General (modifies UG-125 through UG-137).

(a) All pressure vessels built in accordance with applicable requirements in Division 1 of section VIII of the

## 46 CFR Ch. I (10-1-11 Edition)

ASME Code must be provided with protective devices as indicated in UG-125 through UG-136 except as noted otherwise in this subpart.

(b) The markings shall be in accordance with this chapter for devices covered by § 54.15-10.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 88-032, 56 FR 35822, July 29, 1991; USCG-2003-16630, 73 FR 65170, Oct. 31, 2008]

### § 54.15-3 Definitions (modifies Appendix 3).

(a) Definitions applicable to this subpart are in § 52.01-3 of this subchapter.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by USCG-2003-16630, 73 FR 65170, Oct. 31, 2008]

### § 54.15-5 Protective devices (modifies UG-125).

(a) All pressure vessels must be provided with protective devices. The protective devices must be in accordance with the requirements of UG-125 through UG-136 of section VIII of the ASME Boiler and Pressure Vessel Code (incorporated by reference; see 46 CFR 54.01-1) except as modified in this subpart.

(b) An unfired steam boiler evaporator or heat exchanger (see § 54.01-10) shall be equipped with protective devices as required by § 54.15-15.

(c) All pressure vessels other than unfired steam boilers shall be protected by pressure-relieving devices that will prevent the pressure from rising more than 10 percent above the maximum allowable working pressure, except when the excess pressure is caused by exposure to fire or other unexpected source of heat.

(d) Where an additional hazard can be created by exposure of a pressure vessel to fire or other unexpected sources of external heat (for example, vessels used to store liquefied flammable gases), supplemental pressure-relieving devices shall be installed to protect against excessive pressure. Such supplemental pressure-relieving devices shall be capable of preventing the pressure from rising more than 20 percent above the maximum allowable working pressure of the vessel. The minimum required relief capacities for compressed gas pressure vessels are given

under § 54.15-25. A single pressure-relieving device may be used to satisfy the requirements of this paragraph and paragraph (c) of this section, provided it meets the requirements of both paragraphs.

(e) Pressure-relieving devices should be selected on the basis of their intended service. They shall be constructed, located, and installed so that they are readily accessible for inspection and repair and so arranged that they cannot be readily rendered inoperative.

(f) Where pressure-indicating gages are used, they shall be chosen to be compatible with the pressure to be indicated. The size of the visual display, the fineness of graduations, and the orientation of the display will be considered. In no case shall the upper range of the gage be less than 1.2 times nor more than 2 times the pressure at which the relieving device is set to function.

(g) The Commandant may authorize or require the use of a rupture disk in lieu of a relief or safety valve under certain conditions of pressure vessel use and design. See § 54.15-13.

(h) Vessels that are to operate completely filled with liquid shall be equipped with liquid relief valves unless otherwise protected against overpressure.

(i) The protective devices required under paragraph (a) of this section shall be installed directly on a pressure vessel except when the source of pressure is external to the vessel, and is under such positive control that the pressure in the vessel cannot exceed the maximum allowable working pressure at the operating temperature except as permitted in paragraphs (c) and (d) of this section.

(j) Pressure-relieving devices shall be constructed of materials suitable for the pressure, temperature, and other conditions of the service intended.

(k) The opening through all pipes and fittings between a pressure vessel and its pressure-relieving device shall have at least the area of the pressure-relieving device inlet, and in all cases shall have sufficient area so as not to unduly restrict the flow to the pressure-relieving device. The opening in the vessel shall be designed to provide direct and

unobstructed flow between the vessel and its pressure-relieving device.

(l) Safety devices need not be provided by the pressure vessel manufacturer. However, overpressure protection shall be provided prior to placing the vessel in service.

[CGFR 68-82, 33 FR 18828, Dec. 18, 1968, as amended by CGD 88-032, 56 FR 35822, July 29, 1991; CGD 95-012, 60 FR 48049, Sept. 18, 1995; USCG-2003-16630, 73 FR 65170, Oct. 31, 2008]

**§ 54.15-10 Safety and relief valves (modifies UG-126).**

(a) All safety and relief valves for use on pressure vessels or piping systems shall be designed to meet the protection and service requirements for which they are intended and shall be set to relieve at a pressure which does not exceed the "maximum allowable working pressure" of the pressure vessel or piping system. Relief valves are not required to have huddling chambers for other than steam service. In addition, safety valves used on vessels in which steam is generated shall meet § 52.01-120 of this subchapter except § 52.01-120(a)(9). For steam service below 206 kPa (30 psig), bodies of safety valves may be made of cast iron. Safety relief valves used in liquefied compressed gas service shall meet subpart 162.017 or 162.018 in subchapter Q (Specifications) of this chapter as appropriate.

(b) Pilot-valve control or other indirect operation of safety valves is not permitted unless the design is such that the main unloading valve will open automatically at not over the set pressure and will discharge its full rated capacity if some essential part of the pilot or auxiliary device should fail. All other safety and relief valves shall be of the direct spring loaded type.

(c) Safety and relief valves for steam or air service shall be provided with a substantial lifting device so that the disk can be lifted from its seat when the pressure in the vessel is 75 percent of that at which the valve is set to blow.

(d) Safety and relief valves for service other than steam and air need not be provided with a lifting device although a lifting device is desirable if